

SEQUENCE LISTING

<110> Ghayur, Tariq et al.

<120> ANTIBODIES THAT BIND HUMAN INTERLEUKIN-18 AND METHODS  
OF MAKING AND USING

<130> BBI-149

<140>

<141>

<150> 60/181, 608

<151> 2000-02-10

<160> 71

<170> PatentIn Ver. 2.1

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<212> PRT

<213> Homo sapiens

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Pro Leu Phe Glu Asp Met Thr Asp Ser Asp Cys Arg Asp Asn Ala  
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<210> 2

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Cys Pro Leu Phe Glu Asp Met Thr Asp Ser Asp Cys Arg Asp Asn Ala  
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Pro Leu Phe Glu Asp Met Thr Asp Ser Asp Cys Arg  
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Tyr Phe Gly Lys Leu Glu Ser Lys Leu Ser Val Ile Arg Asn Leu Asn  
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Asp Gln Val Leu Phe Ile Asp Gln Gly Asn Arg Pro Leu Phe Glu Asp  
20 25 30

Met Thr Asp Ser Asp Cys Arg Asp Asn Ala Pro Arg Thr Ile Phe Ile  
35 40 45

Ile Ser Met Tyr Lys Asp Ser Gln Pro Arg Gly Met Ala Val Thr Ile  
50 55 60

Ser Val Lys Cys Glu Lys Ile Ser Thr Leu Ser Cys Glu Asn Lys Ile  
65 70 75 80

Ile Ser Phe Lys Glu Met Asn Pro Pro Asp Asn Ile Lys Asp Thr Lys  
85 90 95

Ser Asp Ile Ile Phe Phe Gln Arg Ser Val Pro Gly His Asp Asn Lys  
100 105 110

Met Gln Phe Glu Ser Ser Tyr Glu Gly Tyr Phe Leu Ala Cys Glu  
115 120 125

Lys Glu Arg Asp Leu Phe Lys Leu Ile Leu Lys Lys Glu Asp Glu Leu  
130 135 140

Gly Asp Arg Ser Ile Met Phe Thr Val Gln Asn Glu Asp  
145 150 155

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Ala Pro Val Arg Ser Leu Asn Cys Thr Leu Arg Asp Ser Gln Gln Lys  
1 5 10 15

Ser Leu Val Met Ser Gly Pro Tyr Glu Leu Lys Ala Leu His Leu Gln  
20 25 30

Gly Gln Asp Met Glu Gln Gln Val Val Phe Ser Met Ser Phe Val Gln  
35 40 45

Gly Glu Glu Ser Asn Asp Lys Ile Pro Val Ala Leu Gly Leu Lys Glu  
50 55 60

Lys Asn Leu Tyr Leu Ser Cys Val Leu Lys Asp Asp Lys Pro Thr Leu  
65 70 75 80

Gln Leu Glu Ser Val Asp Pro Lys Asn Tyr Pro Lys Lys Met Glu  
85 90 95

Lys Arg Phe Val Phe Asn Lys Ile Glu Ile Asn Asn Lys Leu Glu Phe  
100 105 110

Glu Ser Ala Gln Phe Pro Asn Trp Tyr Ile Ser Thr Ser Gln Ala Glu  
115 120 125

Asn Met Pro Val Phe Leu Gly Gly Thr Lys Gly Gly Gln Asp Ile Thr  
130 135 140

Asp Phe Thr Met Gln Phe Val Ser Ser  
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Ser Ser Lys Met Gln Ala Phe Arg Ile Trp Asp Val Asn Gln Lys Thr  
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Phe Tyr Leu Arg Asn Asn Gln Leu Val Ala Gly Tyr Leu Gln Gly Pro  
20 25 30  
Asn Val Asn Leu Glu Glu Lys Ile Asp Val Val Pro Ile Glu Pro His  
35 40 45  
Ala Leu Phe Leu Gly Ile His Gly Gly Lys Met Cys Leu Ser Cys Val  
50 55 60  
Lys Ser Gly Asp Glu Thr Arg Leu Gln Leu Glu Ala Val Asn Ile Thr  
65 70 75 80  
Asp Leu Ser Glu Asn Arg Lys Gln Asp Lys Arg Phe Ala Phe Ile Arg  
85 90 95  
Ser Asp Ser Gly Pro Thr Thr Ser Phe Glu Ser Ala Ala Cys Pro Gly  
100 105 110  
Trp Phe Leu Cys Thr Ala Met Glu Ala Asp Gln Pro Val Ser Leu Thr  
115 120 125  
Asn Met Pro Asp Glu Gly Val Met Val Thr Lys Phe Tyr Phe Gln Glu  
130 135 140  
Asp  
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Cys Thr Ser Arg Pro His Ile Thr Val Val Glu Gly Glu Pro Phe Tyr  
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Leu Lys His Cys Ser Cys Ser Leu Ala His Glu Ile Glu Thr Thr Thr  
20 25 30  
Lys Ser Trp Tyr Lys Ser Ser Gly Ser Gln Glu His Val Glu Leu Asn  
35 40 45  
Pro Arg Ser Ser Ser Arg Ile Ala Leu His Asp Cys Val Leu Glu Phe  
50 55 60  
Trp Pro Val Glu Leu Asn Asp Thr Gly Ser Tyr Phe Phe Gln Met Lys  
65 70 75 80  
Asn Tyr Thr Gln Lys Trp Lys Leu Asn Val Ile Arg Arg Asn Lys His

85

90

95

Ser Cys Phe Thr Glu Arg Gln Val Thr Ser Lys Ile Val Glu Val Lys  
100 105 110  
Lys Phe Phe Gln Ile Thr Cys Glu Asn Ser Tyr Tyr Gln Thr Leu Val  
115 120 125  
Asn Ser Thr Ser Leu Tyr Lys Asn Cys Lys Lys Leu Leu Leu Glu Asn  
130 135 140  
Asn Lys Asn Pro Thr Ile Lys Lys Asn Ala Glu Phe Glu Asp Gln Gly  
145 150 155 160  
Tyr Tyr Ser Cys Val His Phe Leu His His Asn Gly Lys Leu Phe Asn  
165 170 175  
Ile Thr Lys Thr Phe Asn Ile Thr Ile Val Glu Asp Arg Ser Asn Ile  
180 185 190  
Val Pro Val Leu Leu Gly Pro Lys Leu Asn His Val Ala Val Glu Leu  
195 200 205  
Gly Lys Asn Val Arg Leu Asn Cys Ser Ala Leu Leu Asn Glu Glu Asp  
210 215 220  
Val Ile Tyr Trp Met Phe Gly Glu Glu Asn Gly Ser Asp Pro Asn Ile  
225 230 235 240  
His Glu Glu Lys Glu Met Arg Ile Met Thr Pro Glu Gly Lys Trp His  
245 250 255  
Ala Ser Lys Val Leu Arg Ile Glu Asn Ile Gly Glu Ser Asn Leu Asn  
260 265 270  
Val Leu Tyr Asn Cys Thr Val Ala Ser Thr Gly Gly Thr Asp Thr Lys  
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Ser Phe Ile Leu Val Arg Lys Ala Asp  
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Cys Lys Glu Arg Glu Glu Lys Ile Ile Leu Val Ser Ser Ala Asn Glu  
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20 25 30

Ile Thr Trp Tyr Lys Asp Asp Ser Lys Thr Pro Val Ser Thr Glu Gln  
35 40 45

Ala Ser Arg Ile His Gln His Lys Glu Lys Leu Trp Phe Val Pro Ala  
50 55 60

Lys Val Glu Asp Ser Gly His Tyr Tyr Cys Val Val Arg Asn Ser Ser

65

70

75

80

Tyr Cys Leu Arg Ile Lys Ile Ser Ala Lys Phe Val Glu Asn Glu Pro  
85 90 95  
Asn Leu Cys Tyr Asn Ala Gln Ala Ile Phe Lys Gln Lys Leu Pro Val  
100 105 110  
Ala Gly Asp Gly Gly Leu Val Cys Pro Tyr Met Glu Phe Phe Lys Asn  
115 120 125  
Glu Asn Asn Glu Leu Pro Lys Leu Gln Trp Tyr Lys Asp Cys Lys Pro  
130 135 140  
Leu Leu Leu Asp Asn Ile His Phe Ser Gly Val Lys Asp Arg Leu Ile  
145 150 155 160  
Val Met Asn Val Ala Glu Lys His Arg Gly Asn Tyr Thr Cys His Ala  
165 170 175  
Ser Tyr Thr Tyr Leu Gly Lys Gln Tyr Pro Ile Thr Arg Val Ile Glu  
180 185 190  
Phe Ile Thr Leu Glu Glu Asn Lys Pro Thr Arg Pro Val Ile Val Ser  
195 200 205  
Pro Ala Asn Glu Thr Met Glu Val Asp Leu Gly Ser Gln Ile Gln Leu  
210 215 220  
Ile Cys Asn Val Thr Gly Gln Leu Ser Asp Ile Ala Tyr Trp Lys Trp  
225 230 235 240  
Asn Gly Ser Val Ile Asp Glu Asp Asp Pro Val Leu Gly Glu Asp Tyr  
245 250 255  
Tyr Ser Val Glu Asn Pro Ala Asn Lys Arg Arg Ser Thr Leu Ile Thr  
260 265 270  
Val Leu Asn Ile Ser Glu Ile Glu Ser Arg Phe Tyr Lys His Pro Phe  
275 280 285  
Thr Cys Phe Ala Lys Asn Thr His Gly Ile Asp Ala Ala Tyr Ile Gln  
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Leu Ile Tyr Pro Val Thr  
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Thr Gly Tyr Tyr Ile His  
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<213> Homo sapiens

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Gln

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Lys Glu Gly Ala  
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Gln Gly Asp Ser Leu Arg His Phe Tyr Pro Asn  
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<213> Homo sapiens

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Gly Lys Asn Asn Arg Pro Ser  
1 5

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<213> Homo sapiens

<400> 14

Gly Ser Arg Asp Ser Ser Gly Ile His Val Val  
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Gln Gly Asp Ser Leu Arg His Phe Tyr Ser Asn  
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Gln

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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
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Ser Met Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Gly Tyr  
20 25 30

Tyr Ile His Trp Val Arg Gln Ala His Gly Gln Gly Phe Glu Trp Ile  
35 40 45

Gly Arg Leu Asn Pro Thr Thr Gly Asp Ala Asn Phe Ala Glu Lys Phe  
50 55 60

Gln Gly Arg Val Ala Leu Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr  
65 70 75 80

Leu Gln Leu Asp Ser Leu Lys Ser Asp Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Gly Lys Glu Gly Ala Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
100 105 110

Ser

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Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg His Phe Tyr Pro  
20 25 30  
Asn Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45  
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser  
50 55 60  
Gly Ser Gly Asn Thr Gly Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu  
65 70 75 80  
Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Arg Asp Ser Ser Gly Ile His  
85 90 95  
Val Val Phe Gly Gly Thr Lys Val Thr Val Leu Gly  
100 105

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Ser Tyr Ala Met  
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<210> 21  
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<400> 21  
Ala Ile Ser Gly Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys  
1 5 10 15

Gly

<210> 22  
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<400> 22  
Asp Asp Asp Asp Tyr Asp Phe Asp Tyr  
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Gly Asn Asp Gln Arg Pro  
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<210> 25  
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Ala Ala Trp Asp Asp Ser Leu Ser Gly Pro Val  
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Ala Ile Ser Gly Ser Gln Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys  
1 5 10 15

Gly

<210> 27  
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<213> Homo sapiens

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1 5 10 15

Gly

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Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly  
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Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly

20

25

30

Lys	Gly	Leu	Glu	Trp	Val	Ser	Ala	Ile	Ser	Gly	Ser	Gly	Gly	Ser	Thr
								40						45	
		35													
Tyr	Tyr	Ala	Asp	Ser	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn
														60	
		50				55									
Ser	Lys	Asn	Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp
															80
		65				70						75			
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Asp	Asp	Asp	Asp	Tyr	Asp	Phe	Asp
Tyr	Trp	Gly	Arg	Gly	Thr	Met	Val	Thr	Val	Ser	Ser				
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20 25 30
Ala Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45
Ile Tyr Gly Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
85 90 95
Ser Gly Pro Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

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<213> *Homo sapiens*

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          Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly
          20           25           30
          Lys Gly Leu Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr
          35           40           45

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Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn  
50 55 60

Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp  
65 70 75 80

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Asp Asp Tyr Asp Phe Asp  
85 90 95

Tyr Trp Gly Arg Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly  
100 105 110

Ser Gly Gly Gly Ser Gly Gly Ser Ala Gln Ser Val Leu  
115 120 125

Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln Arg Val Thr Ile  
130 135 140

Ser Cys Ser Gly Ser Ser Asn Ile Gly Ile Asn Ala Val Asn Trp  
145 150 155 160

Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Gly Asn  
165 170 175

Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys Ser  
180 185 190

Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln Ser Glu Asp Glu  
195 200 205

Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu Ser Gly Pro Val  
210 215 220

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
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<213> Homo sapiens

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Tyr Phe Gly Lys Leu Glu Ser Lys Leu Ser Val Ile Arg Asn  
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<213> Homo sapiens

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Glu Ser Lys Leu Ser Val Ile Arg Asn Leu Asn Asp Gln Val  
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<210> 33

<211> 14

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Val Ile Arg Asn Leu Asn Asp Gln Val Leu Phe Ile Asp Gln  
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Glu Asp Met Thr Asp Ser Asp Cys Arg Asp Asn Ala Pro Arg  
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Met Tyr Lys Asp Ser Gln Pro Arg Gly Met Ala Val Thr Ile  
1 5 10

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Gln Pro Arg Gly Met Ala Val Thr Ile Ser Val Lys Cys Glu  
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<210> 43  
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Val Lys Cys Glu Lys Ile Ser Thr Leu Ser Cys Glu Asn Lys  
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Ile Ser Thr Leu Ser Cys Glu Asn Lys Ile Ile Ser Phe Lys  
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Cys Glu Asn Lys Ile Ile Ser Phe Lys Glu Met Asn Pro Pro  
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Asn Lys Met Gln Phe Glu Ser Ser Ser Tyr Glu Gly Tyr Phe  
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Arg Asp Leu Phe Lys Leu Ile Leu Lys Lys Glu Asp Glu Leu  
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Leu Ile Leu Lys Lys Glu Asp Glu Leu Gly Asp Arg Ser Ile  
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Tyr Phe Gly Lys Leu Glu Ser Lys Leu Ser Val Ile Arg Asn Leu Asn  
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Asp Gln Val Leu Phe Ile Asp Gln Gly Asn Arg Pro Leu Phe Glu Asp  
20 25 30

Met Thr Asp Ser Asp Cys Arg Asp Asn Ala Pro Arg Thr Ile Phe Ile  
35 40 45

Ile Ser Met Tyr Lys Asp Ser Gln Pro Arg Gly Met Ala Val Thr Ile  
50 55 60

Ser Val Lys Cys Glu Lys Ile Ser Thr Leu Ser Cys Glu Asn Lys Ile  
65 70 75 80

Ile Ser Phe Lys Glu Met Asn Pro Pro Asp Asn Ile Lys Asp Thr Lys  
85 90 95

Ser Asp Ile Ile Phe Phe Gln Arg Ser Val Pro Gly His Asp Asn Lys  
100 105 110

Met Gln Phe Glu Ser Ser Tyr Glu Gly Tyr Phe Leu Ala Cys Glu  
115 120 125

Lys Glu Arg Asp Leu Phe Lys Leu Ile Leu Lys Lys Glu Asp Glu Leu  
130 135 140

Gly Asp Arg Ser Ile Met Phe Thr Val Gln Asn Glu Asp  
145 150 155

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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
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tcg atg aaa gtc tcc tgt aag act tct gga tac acc ttc acc ggc tat 96  
Ser Met Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Gly Tyr  
20 25 30

tat atc cac tgg gtg cga cag gcc cct gga cag gga ttc gag tgg ata 144  
Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Phe Glu Trp Ile  
35 40 45

gga cgg ctc aac ccc acc act ggt gac gca aat ttt gca gaa aag ttt 192  
Gly Arg Leu Asn Pro Thr Thr Gly Asp Ala Asn Phe Ala Glu Lys Phe  
50 55 60

cag ggc agg gtc gcc ctg acc aga gac acg tcc atc agc aca gcc tat 240  
Gln Gly Arg Val Ala Leu Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr  
65 70 75 80

tta caa cta gac agc ctc aaa tct gac gac acg gcc gta tat tat tgt 288  
Leu Gln Leu Asp Ser Leu Lys Ser Asp Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

gcg gga aaa gag ggt gcc tgg ggc cag ggc acc ctg gtc acc gtc tcg 336  
Ala Gly Lys Glu Gly Ala Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
100 105 110

agt gg 341  
Ser

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Ser Met Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Gly Tyr  
20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Phe Glu Trp Ile  
35 40 45

Gly Arg Leu Asn Pro Thr Thr Gly Asp Ala Asn Phe Ala Glu Lys Phe  
50 55 60

Gln Gly Arg Val Ala Leu Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr  
65 70 75 80

Leu Gln Leu Asp Ser Leu Lys Ser Asp Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Gly Lys Glu Gly Ala Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
100 105 110

Ser

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Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln  
1 5 10 15

aca gtc agg atc aca tgc caa gga gac agc ctc aga cac ttt tat cca 96  
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg His Phe Tyr Pro  
20 25 30

aac tgg tac cag cag aag cca gga cag gcc cct gta ctt gtc atc tat 144  
Asn Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45

ggt aaa aac aat cgg ccc tca ggg atc cca gac cga ttc tct ggc tcc 192  
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser  
50 55 60

ggc tca gga aac aca ggt tcc ttg acc atc act ggg gcc cag gcg gaa 240  
Gly Ser Gly Asn Thr Gly Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu  
65 70 75 80

gat gag gct gac tat tac tgt ggc tcc cgg gac agc agt ggt atc cat 288  
Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Arg Asp Ser Ser Gly Ile His  
85 90 95

gtg gta ttc ggc gga ggg acc aag gtc acc gtc cta ggt 327  
Val Val Phe Gly Gly Thr Lys Val Thr Val Leu Gly  
100 105

<210> 65  
<211> 109  
<212> PRT

<213> Homo sapiens

<400> 65

Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln  
1 5 10 15

Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg His Phe Tyr Pro  
20 25 30

Asn Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45

Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser  
50 55 60

Gly Ser Gly Asn Thr Gly Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Arg Asp Ser Ser Gly Ile His  
85 90 95

Val Val Phe Gly Gly Thr Lys Val Thr Val Leu Gly  
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<210> 66

<211> 354

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(354)

<400> 66

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Glu Val Gln Leu Leu Glu Ser Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttt agc agc tat 96  
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
20 25 30

gcc atg agc tgg gtc cgc cag gct cca ggg aag ggg ctg gag tgg gtc 144  
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

tca gct att agt ggt agt ggt agc aca tac tac gca gac tcc gtg 192  
Ser Ala Ile Ser Gly Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
50 55 60

aag ggc cgg ttc acc atc tcc aga gac aat tcc aag aac acg ctg tat 240  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80

ctg caa atg aac agc ctg aga gcc gag gac acg gcc gtg tat tac tgt 288  
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

gcg aga gat gac gat gac tac gac ttt gac tac tgg ggc cgg ggg aca 336  
Ala Arg Asp Asp Asp Asp Tyr Asp Phe Asp Tyr Trp Gly Arg Gly Thr

100

105

110

354

atg gtc acc gtc tcg agt  
Met Val Thr Val Ser Ser  
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<210> 67  
<211> 118  
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<400> 67  
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr  
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Asp Asp Asp Asp Tyr Asp Phe Asp Tyr Trp Gly Arg Gly Thr  
100 105 110

Met Val Thr Val Ser Ser  
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<210> 68  
<211> 334  
<212> DNA  
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<220>  
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1 5 10 15

agg gtc acc atc tct tgt tct gga agc agc tcc aac atc gga att aat 96  
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Asn Ile Gly Ile Asn  
20 25 30

gct gta aac tgg tac cag cag ctc cca gga acg gcc ccc aaa ctc ctc 144  
Ala Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

atc tat ggt aat gat cag cgg ccc tca ggg gtc cct gac cga ttc tct 192  
Ile Tyr Gly Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser

50

55

60

ggc tcc aag tct ggc acc tca gcc tcc ctg gcc atc agt ggg ctc cag 240  
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80  
tct gag gat gag gct gat tat aac tgt gca gca tgg gat gac agc ctg 288  
Ser Glu Asp Glu Ala Asp Tyr Asn Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95  
agt ggt ccg gtg ttc ggc gga ggg acc aag ctg acc gtc cta ggt g 334  
Ser Gly Pro Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

<210> 69

<211> 111

<212> PRT

<213> Homo sapiens

<400> 69  
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Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Asn Ile Gly Ile Asn 30  
20 25  
Ala Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu 45  
35 40 45  
Ile Tyr Gly Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser 60  
50 55  
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln 80  
65 70 75  
Ser Glu Asp Glu Ala Asp Tyr Asn Cys Ala Ala Trp Asp Asp Ser Leu 95  
85 90  
Ser Gly Pro Val Phe Gly Gly Thr Lys Leu Thr Val Leu Gly 110  
100 105

<210> 70

<211> 66

<212> PRT

<213> Homo sapiens

<400> 70  
Tyr Phe Gly Lys Leu Glu Ser Lys Leu Ser Val Ile Arg Asn Leu Asn 15  
1 5 10  
Asp Gln Val Leu Phe Ile Asp Gln Gly Asn Arg Pro Leu Phe Glu Asp 30  
20 25  
Met Thr Asp Ser Asp Cys Arg Asp Asn Ala Pro Arg Thr Ile Phe Ile 45  
35 40  
Ile Ser Met Tyr Lys Asp Ser Gln Pro Arg Gly Met Ala Val Thr Ile 60  
50 55

Ser Val  
65

<210> 71  
<211> 34  
<212> PRT  
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<400> 71  
Phe Leu Ala Cys Glu Lys Glu Arg Asp Leu Phe Lys Leu Ile Leu Lys  
1 5 10 15

Lys Glu Asp Glu Leu Gly Asp Arg Ser Ile Met Phe Thr Val Gln Asn  
20 25 30

Glu Asp